

Application No.: 10/700003  
Docket No.: CL1646USDIV

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**Amendments to Claims**

**Claims 1-22 (canceled)**

**Claim 23 (Previously Presented)** A method for the production of isoprenoid compounds comprising: contacting a transformed host cell under suitable growth conditions with an effective amount of a carbon source whereby an isoprenoid compound is produced, said transformed host cell comprising a nucleic acid molecule encoding SEQ ID NO: 4, under the control of suitable regulatory sequences, and wherein said isoprenoid compound is selected from the group consisting of  $\beta$ -carotene and astaxanthin.

**Claim 24 (Original).** A method according to Claim 23 wherein the transformed host cell is selected from the group consisting of *Aspergillus*, *Trichoderma*, *Saccharomyces*, *Pichia*, *Candida*, *Hansenula*, *Salmonella*, *Bacillus*, *Acinetobacter*, *Rhodococcus*, *Streptomyces*, *Escherichia*, *Pseudomonas*, *Methylomonas*, *Methylobacter*, *Alcaligenes*, *Synechocystis*, *Anabaena*, *Thiobacillus*, *Methanobacterium* and *Klebsiella*.

**Claim 25 (Previously Presented).** A method according to Claim 36 wherein said methanotrophic bacteria:

- (a) grows on a C1 carbon substrate selected from the group consisting of methane and methanol; and
- (b) comprises a functional Embden-Meyerhof carbon pathway, said pathway comprising a gene encoding a pyrophosphate dependent phosphofructokinase enzyme.

**Claim 26 ( Original).** A method according to Claim 25 wherein said methanotrophic bacteria is *methylomonas* 16a ATCC PTA 2402.

**Claim 27 ( Canceled).**

**Claim 28 ( Original).** A method according to Claim 23 wherein the carbon source is selected from the group consisting of monosaccharides, oligosaccharides, polysaccharides, carbon dioxide, methanol, methane, formaldehyde, formate, and carbon-containing amines.

**Claim 29 ( Original).** A method according to Claim 23 wherein the transformed host is selected from the group consisting of *Methylomonas*, *Methylobacter* and *Methanobacterium* and the carbon source is selected from the group consisting of methane and methanol.

**Claims 30-35 (canceled)**

**Claim 36 (New)** A method according to Claim 23 wherein said transformed host cell is a methanotrophic bacteria.